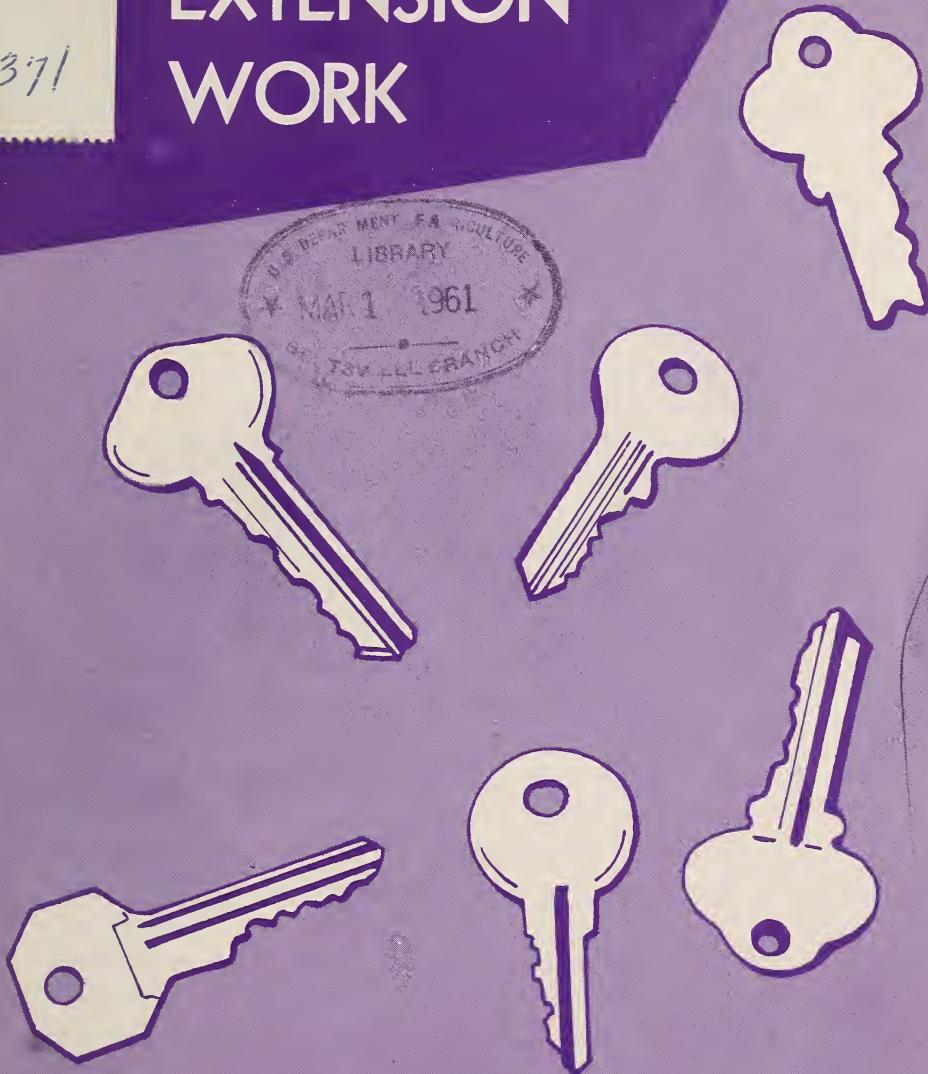


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Six Keys to EVALUATING EXTENSION WORK



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This is an introduction to evaluation of Extension educational work. It includes some basic principles of evaluation, and is designed for use by State and county extension workers who have become interested in the evaluation process, or who wish to review major principles involved.

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Evaluation Is a Vital Part of Extension Teaching

The Extension Service, through its many educational programs and activities, is attempting to bring about changes in what people do, and changes in their knowledge, interests, understandings, attitudes, and skills.

Extension evaluation is the process of determining the extent and the way these changes are accomplished. We need to evaluate teaching methods and results in order to complete any educational work. This evaluation work will reveal "how you're doing." Then you'll have evidence of results of your work.

When planned-for changes in people occur with expected frequency or speed, considering the effort we put forth, we may feel confidence in our work. On the other hand, if planned-for changes occur too infrequently, or only unplanned changes occur, we all realize that we need to reorganize or modify our plans to assure desired evidences of success.

We should evaluate small pieces of our work, such as letters, talks, and farm visits, just as carefully as our programs. In fact, it is often more practical to evaluate educational work "in pieces" than to try to evaluate the results of a total program after it is completed.

It is important that we determine the results of an educational effort in a reliable and objective manner. Otherwise, we may draw wrong conclusions. Such conclusions may give approval to inadequate work rather than suggest areas where improvement is needed. Unreliable evaluation might even show effective educational work as being ineffective.

We all have six principal keys to open the doors to reliable and objective extension evaluation.

Six Keys to Evaluating Extension Work

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Statement of Objectives



1. State the objectives of an action or activity to be evaluated in terms of behavior changes in the people who are to do the learning.

This is the first key to reliable evaluation. You need to decide the changes in people that you are to help bring about. Determining whether or not these changes occur is the process of evaluation. Therefore, it is important that you carefully define and clarify these planned-for changes at the beginning in the statement of objectives.

For example:

THIS



Farmers to learn which crop variety is best adapted to their soils.

NOT THIS

To inform farmers about the crop variety which is best adapted to their soils.

NOR THIS

To hold meetings on crop variety suitable for farms in the county.

In the first statement, behavior change in the learner is stressed; in the other two, activity of the Extension Service worker is emphasized.

Starting from the first statement, you can evaluate by determining whether the *farmers learned* the desired specific information. Starting from the second, you would have to find out only if you yourself had *given out* the information. Starting from the third, only the Extension worker's action concerning a teaching method is included; the learners are not mentioned. Determining whether a person *held* a meeting is very incomplete educational evaluation.

Source of Evidence



2. Only those people whom you try to reach can provide proof of your success or failure.

We learned in key 1 that the objective of your educational program or action should be stated to define clearly the desired behavior change. So also should your teaching activities be planned to reach those people whom you want to reach, and to make learning most possible for them.

Some kinds of learning can result from a variety of teaching methods, while others require particular teaching methods. For example, a homemaker may learn the importance of a balanced diet through reading, listening to talks, participating in discussions, and other ways. We all know, though, that a learner cannot learn certain physical skills without actually doing them.

The teaching methods you use or supervise determine which people could have been influenced to learn. These people, then, by their performance, are the only ones who can provide evidence of teaching success.

To determine who might have learned something from your teaching, you need to know three things: (1) What you can expect from different kinds of teaching methods, (2) the possible chain reaction which your teaching of certain kinds of information can set up, and (3) whether or not the learners have the facilities to practice and acquire skill in what you have been teaching.

Suppose you define *incorrectly* the people who can be expected to provide evidence of the degree of success of your teaching; this mistake may cause evaluation to unduly emphasize lack of success just as often as it may overemphasize success.

Objective: Homemakers to acquire skill in cleaning a sewing machine.

Teaching methods used at a home demonstration club meeting:

- (1) Lecture,
- (2) Demonstration,
- (3) Practice period.

Those who can provide proof of success are:

THESE

Those homemakers attending the meeting. Also family members or neighbors who could have watched member carry out practice, could have asked questions and had a sewing machine to clean.

NOT THESE

All members of home demonstration club.

NOR THESE

All homemakers in county.

A review of your program and plan of work will enable you to identify where success and failure may have occurred, and those people to whom you can go to obtain information about them. This analysis need not be a formal process, but it should be carried out during the process of evaluation. Then you'll know what evidences of success to look for and where to look for them. Perhaps you can examine each phase, activity, or job with these questions in mind:

What is the educational objective?

What subject matter have I taught?

What teaching methods did I use?

Who could have been influenced to change?

What kinds of change could I expect?

Answers to these questions lead you directly into the next steps of evaluating Extension work.

But you'll still have done some useful evaluation if you go no further than Keys 1 and 2. By studying your program and plan of work right at your desk, you are analyzing your chances of reaching your objectives. This study, by itself, gives you a partial answer to your effectiveness—without going beyond this point. Naturally a complete evaluation using all six keys is better than just the first two alone.

At this stage, let us recognize that it is not always possible to find out whether or not people really did learn. Sometimes we can only determine how good the opportunity was for them to learn. Do not be satisfied with evaluating only the opportunity to learn if you have any chance to measure your success in bringing about actual learning.

Representative Sample



3. Those persons who actually provide the evidence of success must be representative of all whom you tried to reach.

Extension workers usually reach more people than they can collect evidence from to provide proof of their success or failure. They also teach more things than they have time to check on each year. Therefore, it becomes necessary to get information from only a part of the people about only part of the things taught.

When you get information from only part of the people, you are "sampling" your "population." First, you describe your "population" through the process described in Key 2. Then, from this "population," you select those from whom you will collect information.

You have two ways of selecting people from whom to collect evidence so that these people will be representative of the total group you tried to reach:

(1) Use *the total group* of people who could have learned what you were teaching as the source of evidence. This is usually too large a number to reach with resources available.

(2) Use a random sampling method. Give every person in the total group an equal chance to be selected. Most common ways are:

(a) Choose every "nth" (3d, 7th, etc.) name from a list of names (of people, clubs, and so forth). Be sure the list includes all names in total group.

(b) From a map pick every "nth" geographic area which contains, on an average, a predetermined average number of homes.

Method (b) is not very practical when people from whom you're collecting evidence live in only a part of the homes in the areas. It is necessary, however, when names and addresses are not available.

Whether you follow method (a) or (b), select a sample large enough to assure that most of the characteristics of the total group will be represented. This minimizes sampling error, and

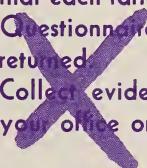
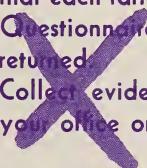
allows for adequate analysis of the information. Statisticians on the land-grant college campuses can help you decide the proper size of sample. The size depends on:

- The facilities and time to collect information.
- The need for statistical accuracy.
- The uniformity or complicated nature of the total group.
- Plans to analyze the information collected.

It's not enough to just send or take a questionnaire or record form to the total group, or to a representative sample of the total group. Filled-out, or "answered" questionnaires or record forms must be *returned from all*, or a *very high share* of those contacted.

Total group you were trying to reach: All dairy farmers in county.

Reliable sample:

THIS		Every "nth" name from list of dairy farmers. See that each farmer selected answers the questionnaire.
NOT THIS		Questionnaire sent to all; use those which are returned.
NOR THIS		Collect evidence from dairy farmers who call at your office or whom you visit during routine work.

This may sound like we're discouraging use of the mail questionnaire. Not at all. This method is often highly regarded because of its convenience. You can use it effectively if you send it to a representative sample of people, and continue the followup until a very high proportion of returns comes in.

Collecting evidence of success from people who do not represent the larger group occurs very often because (1) it is less trouble to collect evidence from some groups of the population than from others, or (2) the sample is believed to be representative even though it is not.

Evidence from a nonrepresentative group is no better than no evidence at all, and often is so misleading that it is worse. If it is too much trouble to get evidence from a representative group in order to draw reliable conclusions for the total group, it is too much trouble to evaluate. Because teaching is not complete without evaluating, failure to evaluate properly is admission that complete teaching is too much trouble.

Appropriate Methods



4. The methods of obtaining evidence must be appropriate to the kinds of information being collected.

A fourth key to effective evaluation: Remember that the method used to collect evidence depends on the kind of evidence, and on the resources you have to collect it.

Evidence of educational success is that which tells whether or not learning has occurred. For each desired behavior change, you must determine whether the things you can see, or hear, or feel will tell you the change has occurred. Sometimes evidence is in the form of action carried on by the learner; at other times it might be the product resulting from some action; or it may be what the learner passes on to someone else.

Things you can see can be recorded on observation sheets. However, you're seldom present to see people carry out what was taught, so you have to resort to forms filled out by the learner. Where the right situation exists, you can use personal observation to obtain evidence of changes in behavior, such as changes in knowledge, attitudes, appreciation, and understanding. Otherwise, you'll have to resort to questionnaires or tests filled out by the learner.

A great deal of evaluation—of letters, of home visits, of meetings—is carried out without recording the results. However, it is usually necessary, in addition, to carry out a systematic plan of evaluation which requires forms, or questionnaires, or written observations of some kind. Such a plan should be made out when the teaching plan is set up. If it was not done then, it is better done later than not at all. Regardless of the method used, or when it is planned, keep in mind that evaluation is in the terms of changes in the people, *not* in terms of what you do.

Another important point to consider in deciding how to collect and record evidence is determining how to set up a base-mark from which to measure. The result of effective education is a behavior change; therefore, it is necessary to measure *changes*, from one time to another.

Behavior change to evaluate:

Youth to learn to be more interested in his community.

THIS



Recorded observation of what he does in his community before and after the teaching.

**NOT THIS
NOR THIS**

~~Ask him if he is more interested in his community.~~

~~Ask him what he has just done in his community.~~

The behavior change used in these examples is one of attitude change. Attitude change is indicated by what a person *does*, and not by what he *says*. Therefore, the first method is much more valid than the second method. The third method does not indicate any *change* in attitude. The person may have done these same things for many years, both before and after the teaching, which would mean no change in his attitude.

These examples illustrate only the one point: The need to determine whether or not a behavior change occurred. Another point to keep in mind is the need to record exact methods, amounts, lengths of time, and so forth at the time the action takes place. When you need that kind of data as evidence, do not depend on memory; you should set up a system of periodic recording.

Here's a third point of importance, when deciding on methods of collecting information: Who collects it as well as who provides it. Often children cannot provide evidence of their learning, and, in some of the more difficult areas, adult learners cannot provide evidence. In many cases, when adults would provide some people with reliable evidence, they would not others. Always ask yourself: Who can provide reliable, useful information? Who can get it from them, intelligently and with good public relations?

Often an important decision for Extension workers is whether to use a mail questionnaire, a personal interview, or a group questionnaire.

The mail questionnaire, although inexpensive, is often not returned; it has to be short and simple.

The personal interview, with or without a questionnaire, is expensive but can obtain the most reliable information.

The group questionnaire is less expensive but the group members often want to all give the same answers. With school children, it is the most appropriate method for most subjects.

Reliable Questions



5. Word questions carefully so you obtain reliable, unbiased data.

You can ask questions directly or indirectly, or use them as guides for observation. A question is reliable if you ask it in such a way, and under such conditions, that you can have faith in the answer.

Here are a few of the "Do's" for those who construct questions:

Ask questions which are clear, concrete, and have definite answers.

Ask questions that are easy to understand.

Ask questions without a clue to the answer desired.

Avoid questions which involve more than one idea.

Provide adequate space to write each answer. Whenever possible use a check for an answer.

Field-test (pretest) all questions.

See that the time period covered by each question is clear.

For those who ask the questions, ask every question exactly the same every time. Do not imply answers when explaining.

When asking questions about a tour:

THIS



Did you see any new methods of pasture treatment on the tour? Yes _____ No _____
If YES, what were they? _____

(Allow space to write.)

NOT THIS

What new methods of pasture treatment did you see on the tour? _____

(Allow space to write.)

NOR THIS

Didn't you think the tour was helpful? Yes _____
No _____ Don't know _____

The first part of the first question is specific. The second part of the question is a check on the reliability of the response to the first part.

The second question starts out by assuming everyone saw something new. This forces an answer.

In the third question the correct answer is implied, and the meaning of the word "helpful" is obscure.

Plan To Use Results



6. Decide how you will analyze and use your evaluation results before evaluation is done.

We don't collect evidence just to be doing something. Evaluation includes studying the results and applying the analysis of them to objectives and methods to see where changes need to be made.

Because evidence of educational activity is invariably collected from a number of people, you as evaluator first add up the evidence you have collected.

Converting the totals into percentages or averages provides statistics that speak for people as groups rather than as individuals and enables comparison of groups of different sizes. If you've done your sampling properly, you can apply percentages and averages to the total group from which the respondents were drawn.

In this final step of summarizing and analyzing data, your interpretation of them is of greatest importance.

It may interest you or others that in a given area 10 percent of the dairy farmers are organized in an artificial insemination organization or that 50 percent of the farm homemakers with less than high-school education have asked for discussions of rural health facilities. However, study these percentages with questions like these in mind:

Is this percentage high, low, expected, or unexpected?

What have I done or not done to make it high, or keep it so low?

What other factors are related to it?

How should I change my methods or program to bring about a different kind or a different amount of change?

When statistical data and other information collected during evaluation have been summarized, analyzed, and used, two results occur: (1) The program fits the needs and (2) You are more efficient as an Extension Service worker.

WHEN WE EVALUATE EXTENSION WORK—

- We do so in terms of objectives.
- We base it on evidence from people we try to reach.
- We record the evidence.
- We use the findings.